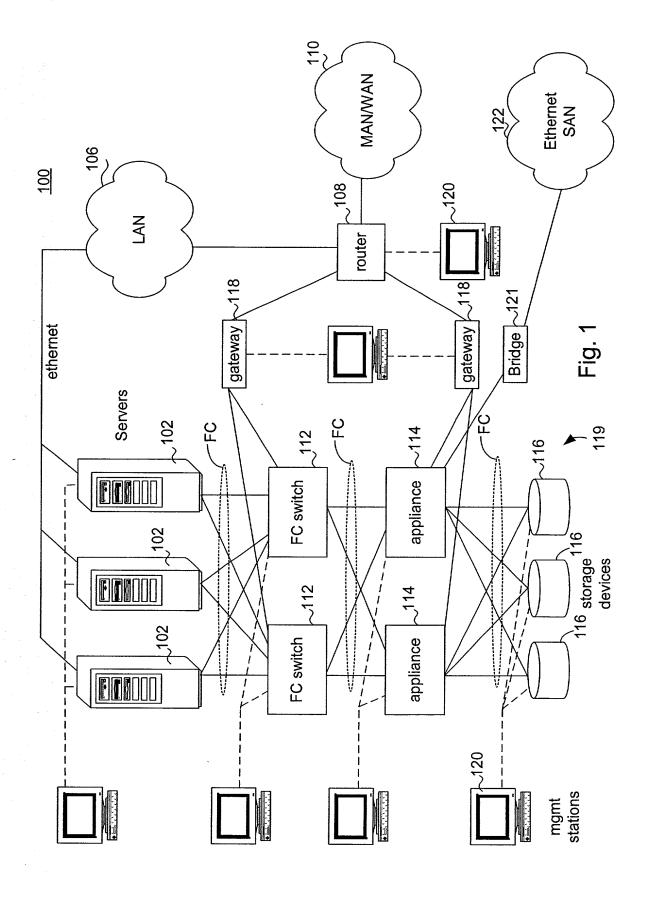
# Page 1 of 38 Attorney: Sarah Barone Schwartz Applicant: Santosh C. Lolayekar et al. Applicant: Santosh C. Lolayekar et al. Applicant: Santosh Ack Per SERVICES Applicant: Santosh 1 of 38



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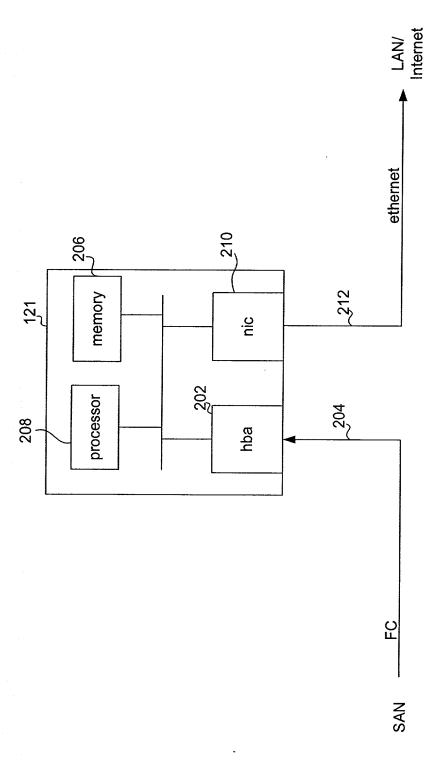
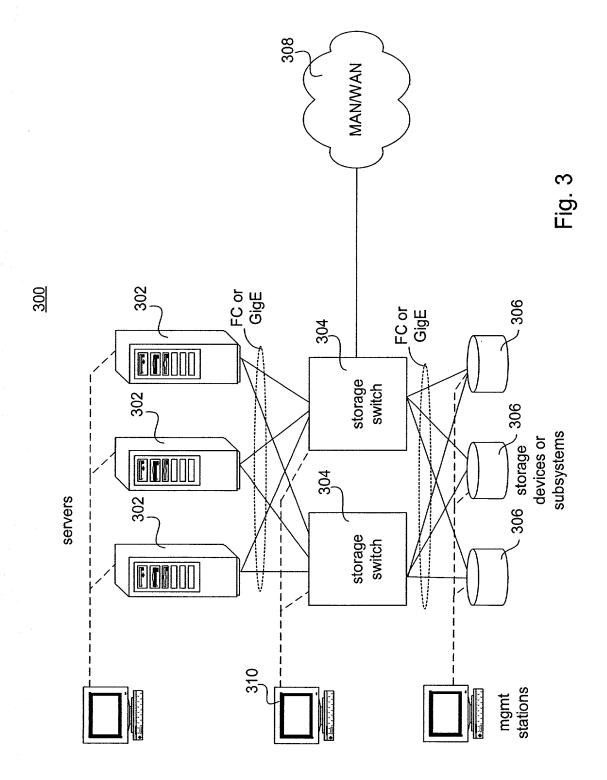
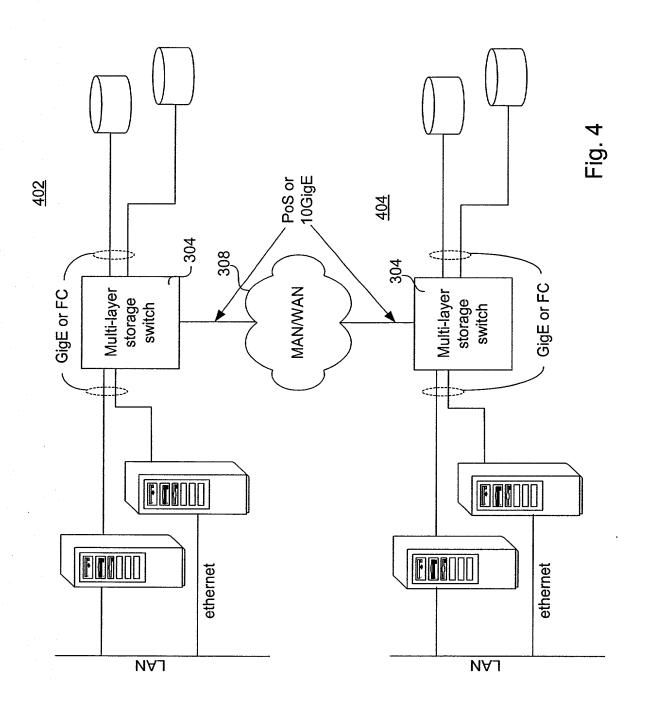


Fig. 2

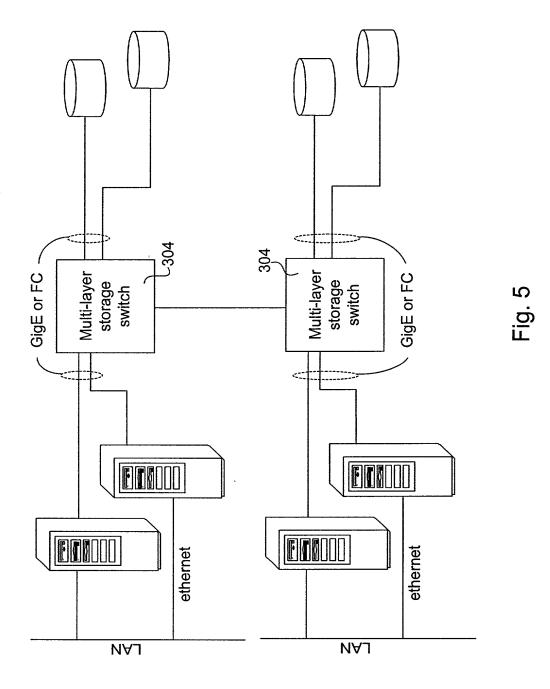
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# Page 4 of 38 Attorney: Sarah Barone Schwartz Express Mail No.: EL670724529US Attorney Docket No.: MARA-01002US0 SBS Attorney Docket No.: MARA-01002US0 SBS Attorney Barone Schwartz Express Mail No.: EL670724529US

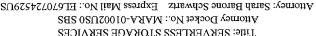


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### Attorney: Satah Batone Schwartz $\,$ Express Mail No.: EL670724529US Attorney: Satah Batone Schwartz $\,$ Express Mail No.: EL670724529US Lide: SERVERLESS STORAGE SERVICES Page 6 of 38 Applicant: Santosh C. Lolayekar et al.



612 6,10 Database (objects) System Control Cards Fabric Cards 809 602 909 604 WAN line cards GigE line cards FC line cards and storage devices and storage devices and storage devices to/from servers to/from servers to/from servers

Fig. 6

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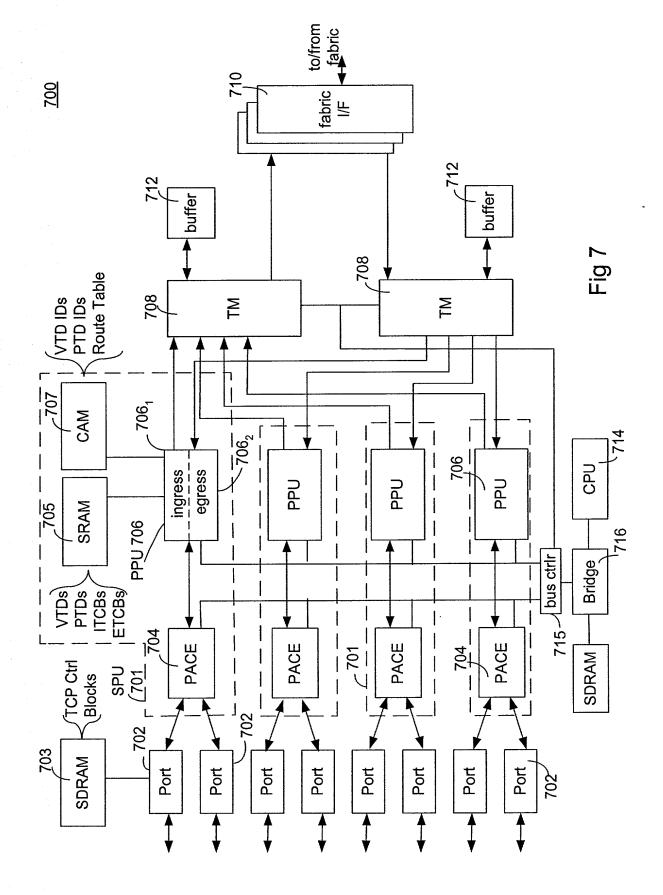


Fig. 7a

VTD ID
FlowID
Extent Descriptors (e.g., size, location)
# of outstanding commands
Max # of commands
Response time
LUN
TCP control block index
S\_ID/D\_ID
MaxCmdSN
Total open sequences

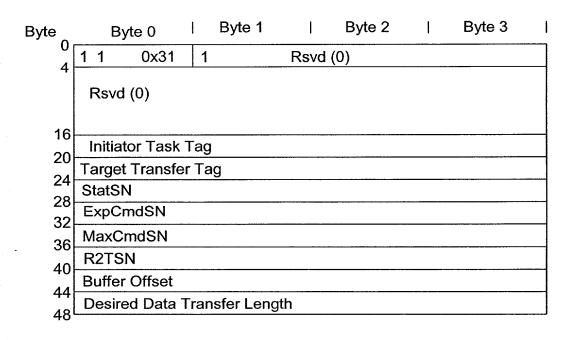
VTD

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Byte	Byte 0	Byte 1		Byte 2	Byte 3		
4	X I 0x01	FRW 00 /	ATTR	Rsvd	CRN or Rsvd		
4 8	TotalAHSLeng	TotalAHSLength DataSegmentLength					
16	Logical Unit Number (LUN)						
20	Initiator Tasl	∢Tag					
24	Expected Data Transfer Length						
2 <del>4</del> 28	CmdSN						
32	ExpStatSN or ExpDataSN						
02	SCSI Co Descriptor B						
48							

iSCSI Command PDU Fig. 8a



iscsi R2T PDU Fig. 8b

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Byte	Byte 0	l Byte 1	1	Byte 2	1	Byte 3
4	0 0 0x05	F	Rsvd	(0)		
4 8	Rsvd (0)	DataSegm	entLeng	jth		
U	LUN or Reserved (0)					
16						
20	Initiator Task	Tag				
	Target Transfer Tag or 0xffffffff					
24	28 Rsvd (0) ExpCmdSN					
32						
36	Rsvd (0)					
40	DataSN					
Buffer Offset						
48	Rsvd (0)					
40	Data					

iSCSI Write Data PDU Fig. 8c

^	Byte 0	Byte 1	١	Byte 2	l Byte 3			
0 4	1 1 0x25	F OL	IS	Rsvd (0)	Status or Rsvd			
8	Rsvd (0)	DataSegmer	ntLei	ngth				
J	Rsvd (0)							
16	7.444.555							
20	Initiator Task	Tag						
24	Rsvd (0)							
28	StatSN or David (0)							
32	ExpCmdSN							
36	MaxCmdSN							
40	DataSN							
44	Buffer Offset							
44	Residual Cour	nt						
	Data							

iSCSI Read Data PDU Fig. 8d

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•	Byte 0	Byte 1	Byte 2	Byte 3			
0	1 1 0x21	1 rsv 0 u 0 u 0	Status	Response			
4 8	Rsvd (0)	DataSegmentLe	ength				
	Rsvd (0)						
16							
	Initiator Task T	ag					
20	Basic Residual	count					
	24 StatSN						
28 32	ExpCmdSN						
36	MaxCmdSN						
40	ExpDataSN or F	Rsvd (0)					
44	ExpR2TSN or I	Rsvd (0)					
44	Bidi-Read Resi	dual Count					
40	Sense Data an	d Response Data	a (optional)				

iSCSI Response PDU Fig. 8e

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Bits	31-24	23-16	15-08	07-00
Word				
0	R_CTL		D_ID	
1	rsvd	S_ID		
2	TYPE	F_CTL		
3	SEQ_ID	DF_CTL	SEQ_CNT	
4	OX	_ID RX_ID		
5	RLTV_OFF			

FC Frame Header Fig. 8f

Field Name	Description	Size
FCP_LUN	logical unit number	8 bytes
FCP_CNTL	control field	4 bytes
FCP_CDB	SCSI command descriptor block	16 bytes
FCP_DL	Data Length	4 bytes

FCP\_CMND Payload Fig. 8g

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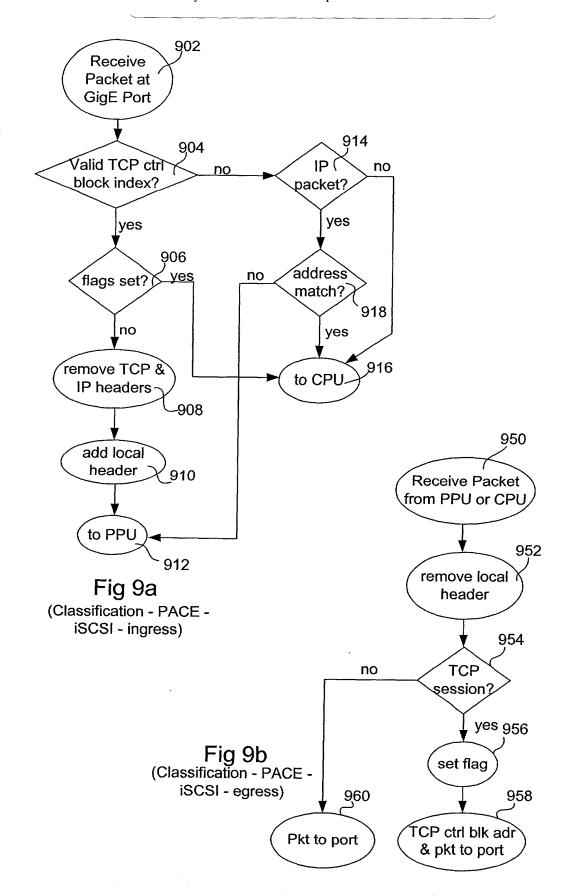
Field Name	Description	Size
DATA_RO	Relative offset of first byte of FCP_DATA IU that follows	4 bytes
BURST_LEN	length of FCP_DATA IU that follows	4 bytes
rsvd		4 bytes

### FCP\_XFR\_RDY Payload Fig. 8h

Field Name	Description	Size
rsvd		4 bytes
rsvd		4 bytes
FCP STATUS	field validity and SCSI status	4 bytes
FCP_RESID	residual count	4 bytes
FCP_SNS_LEN	Length of FCP_SNS_INFO field	4 bytes
FCP_RSP_LEN	Length of FCP_RSP_INFO field	4 bytes
FCP_RSP_INFO	FCP response info	m bytes
FCP_SNS_INFO	FCP sense info	n bytes

FCP\_RSP Payload Fig. 8i

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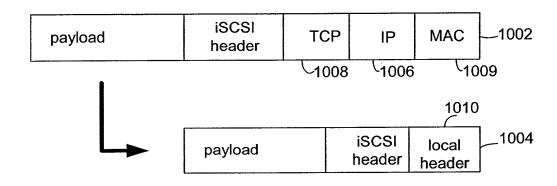


Fig. 10a

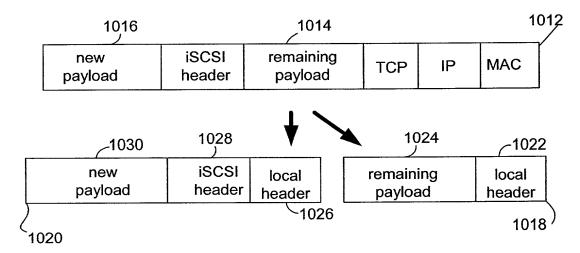


Fig. 10b

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### <u>1100</u>

Local Header

VTD ID

**FlowID** 

TCP Control Block Index

Type

Size

Task Index

Source (Port, PACE, Linecard, CPU)

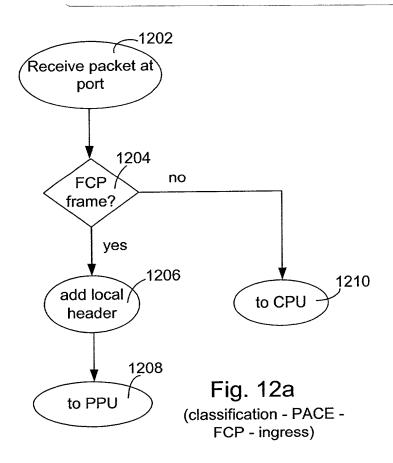
Destination (Port, PACE, Linecard,

CPU)

Fig. 11

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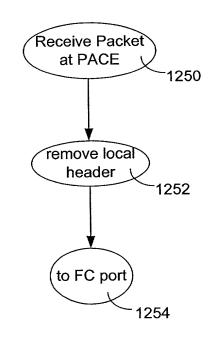
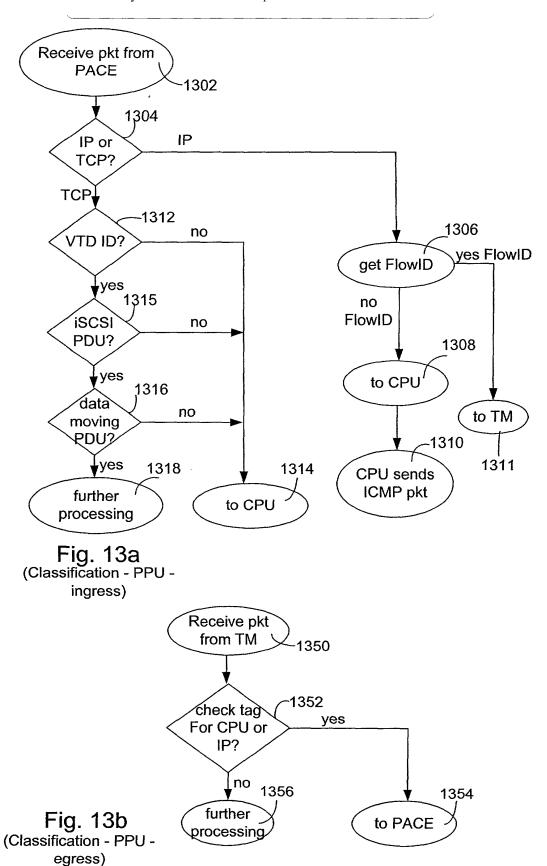
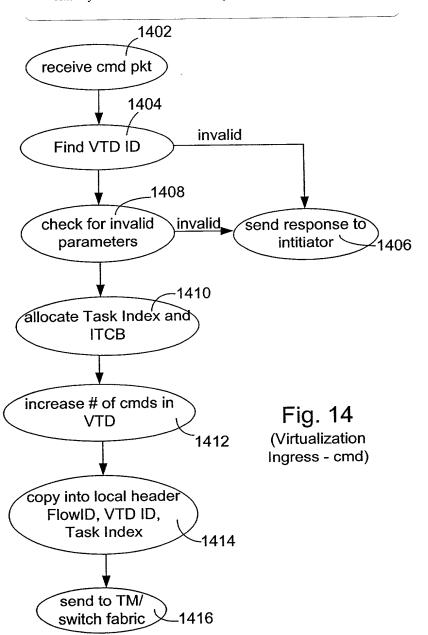


Fig. 12b (classification - PACE -FCP - egress)

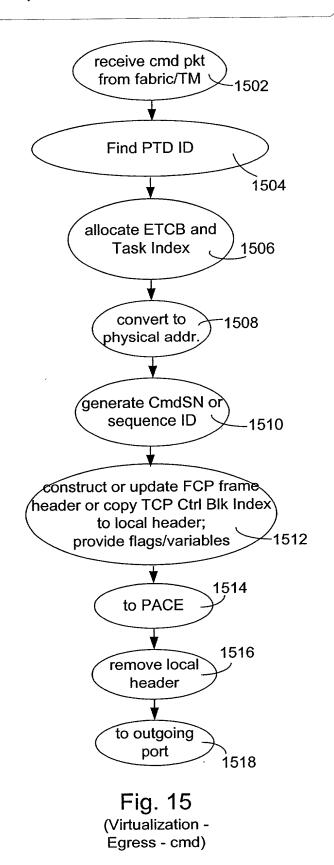
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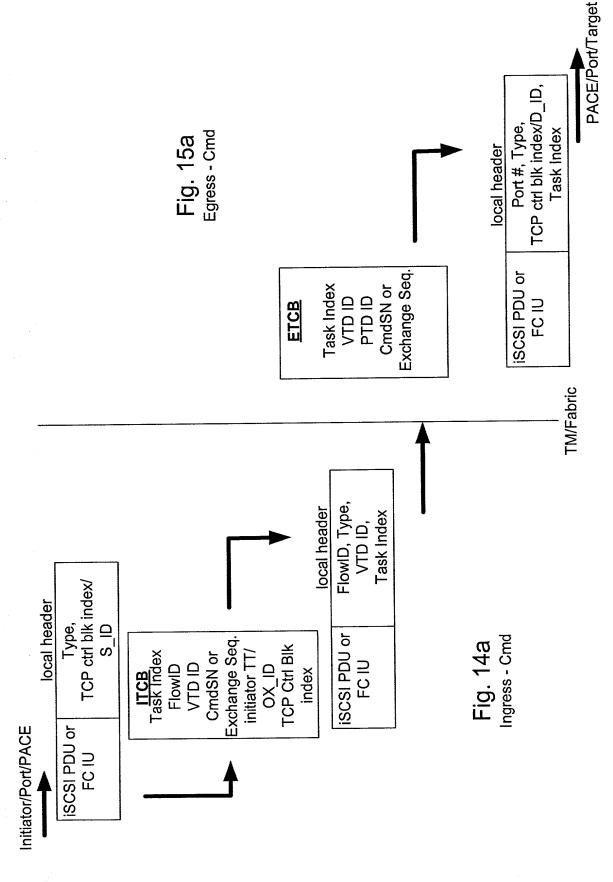


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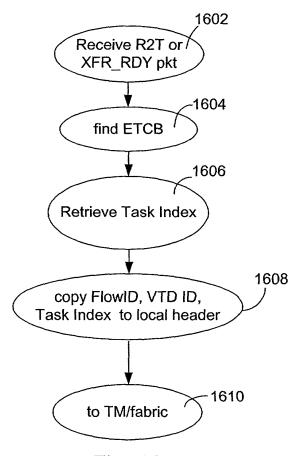
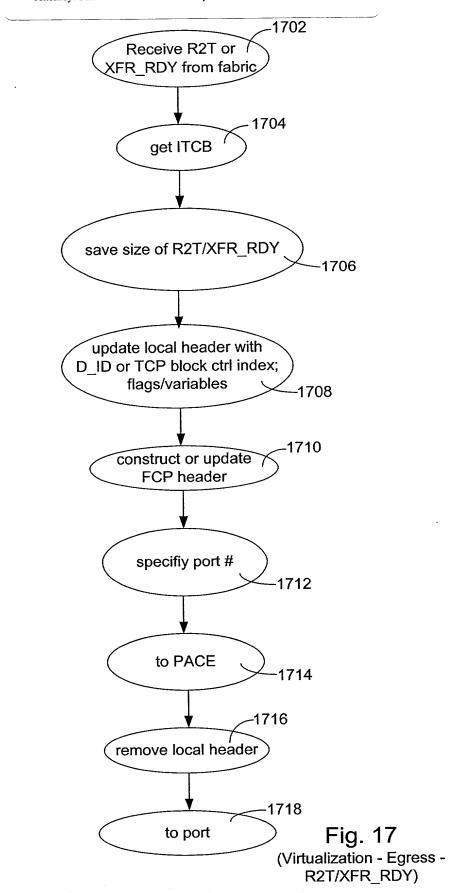


Fig. 16 (Virtualization - Ingress -R2T/XFR\_RDY)

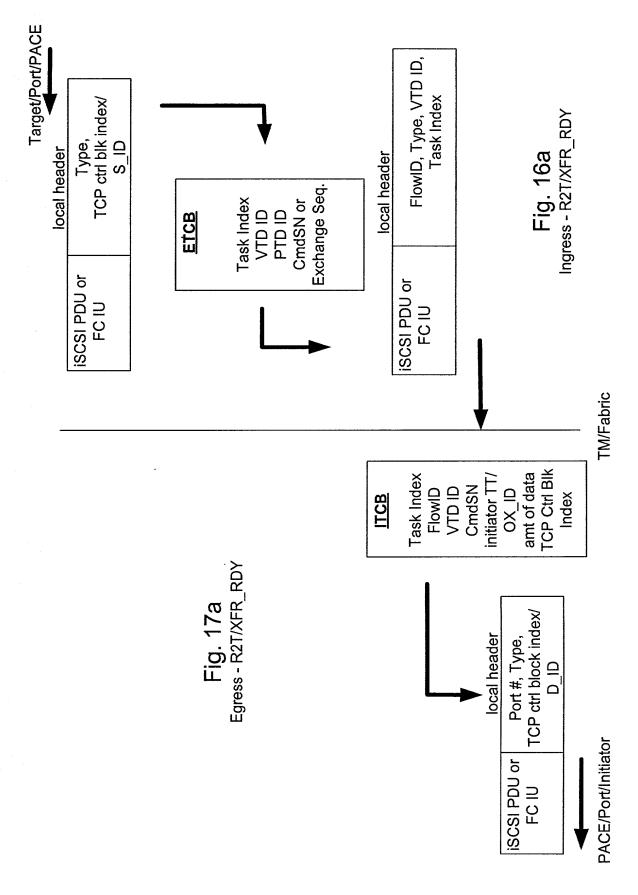
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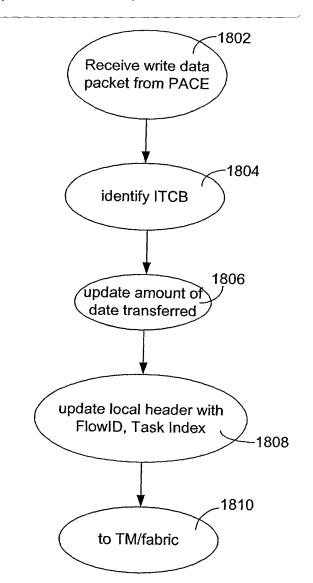


Fig. 18 (Virtualization - Ingress write data packet)

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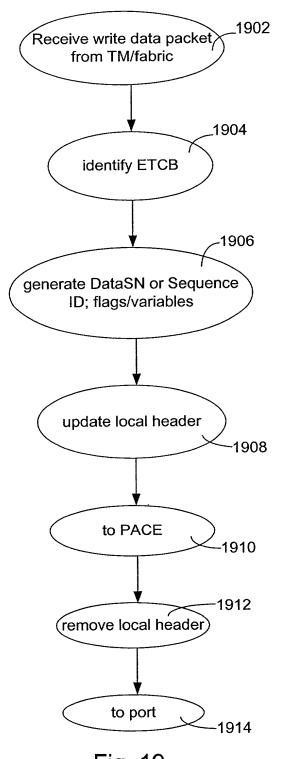
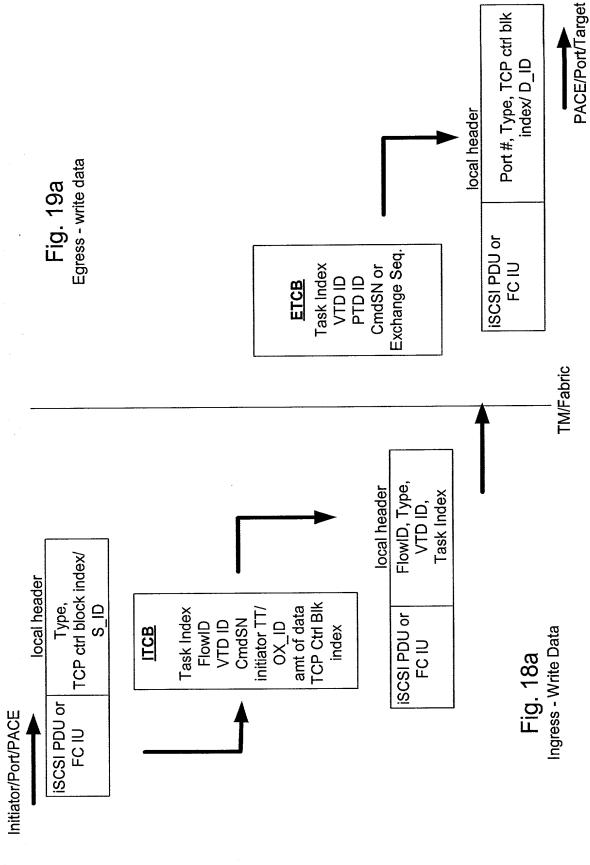


Fig. 19 (Virtualization - Egress write data pkt)

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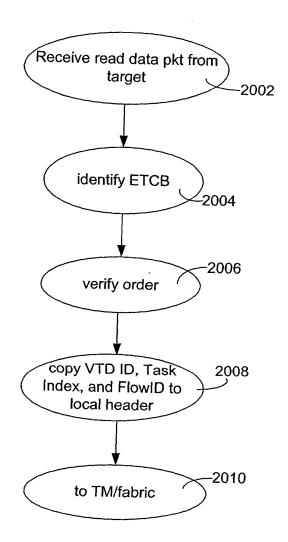
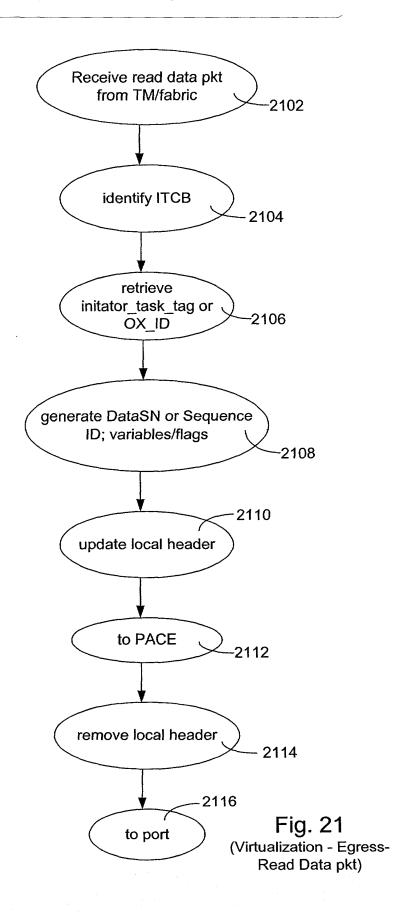
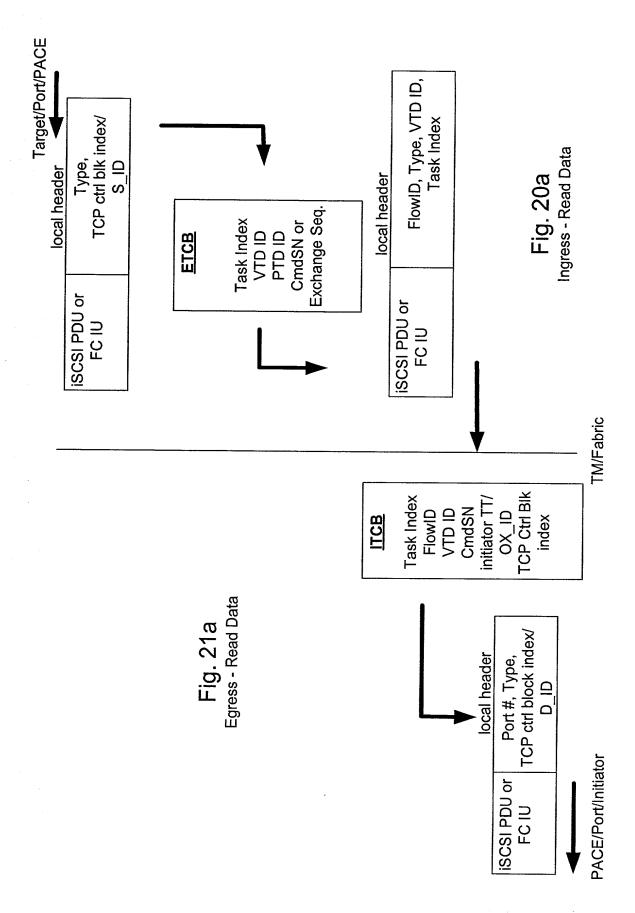


Fig. 20 (Virtualization - Ingress -Read Data pkt)

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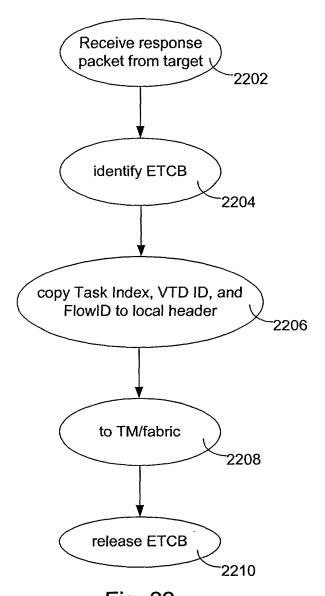
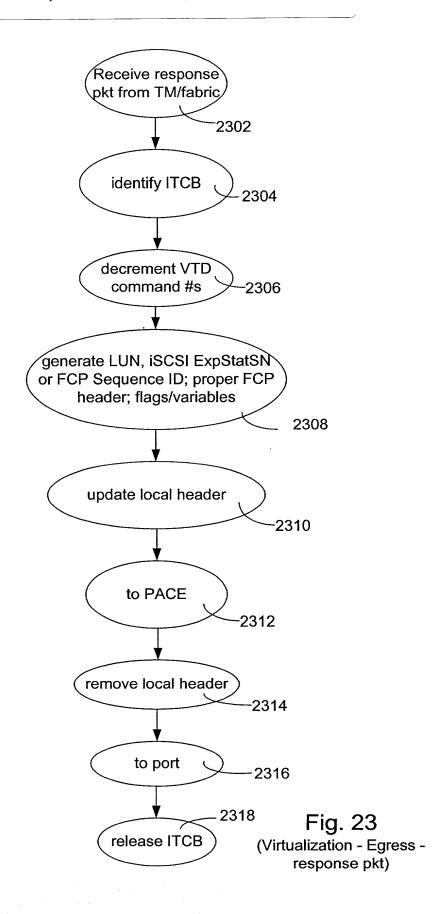


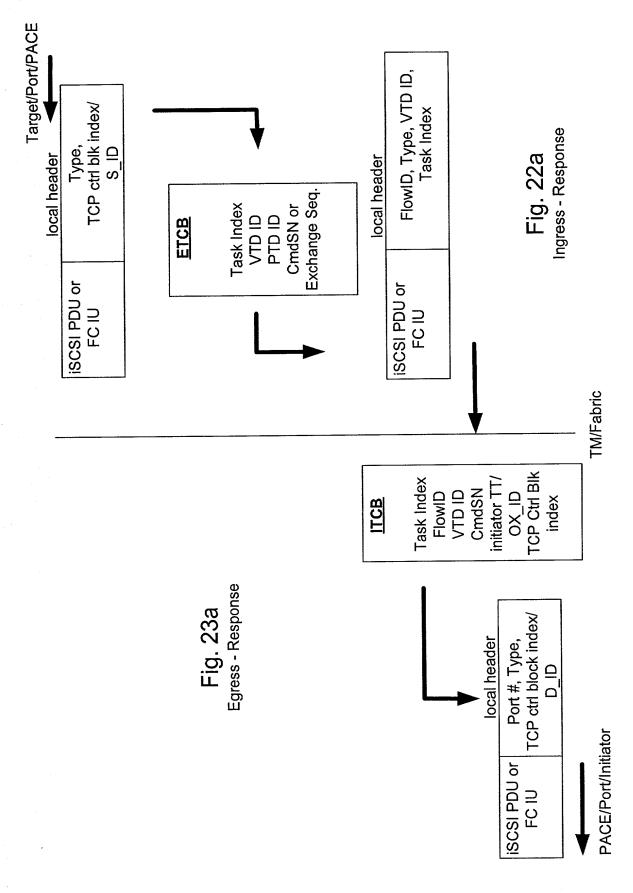
Fig. 22 (Virtualization - Ingress - response pkt)

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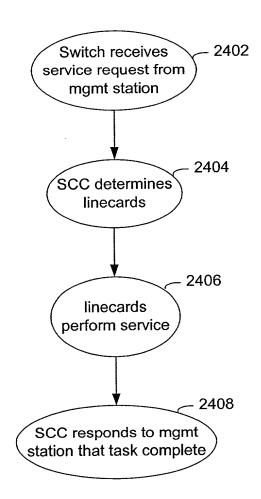
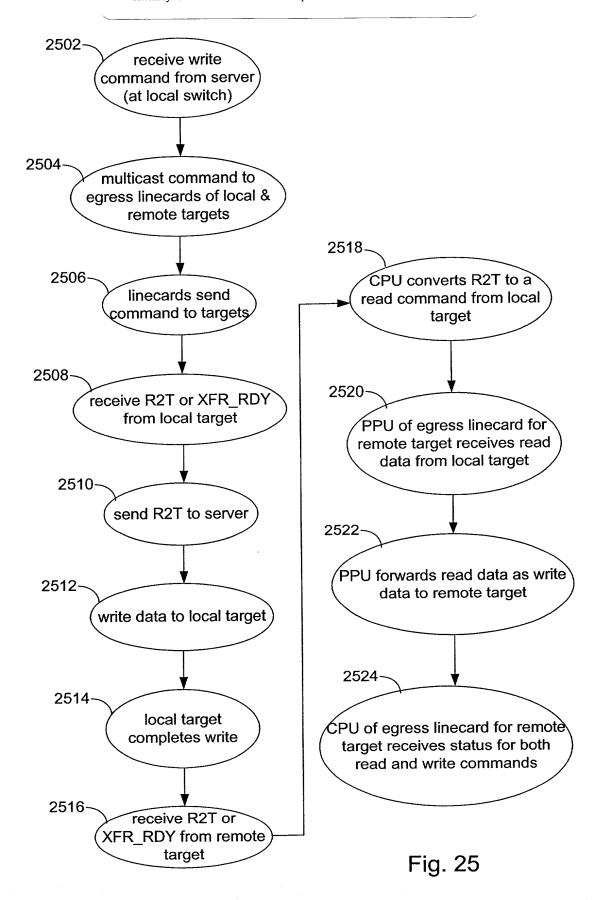


Fig.24

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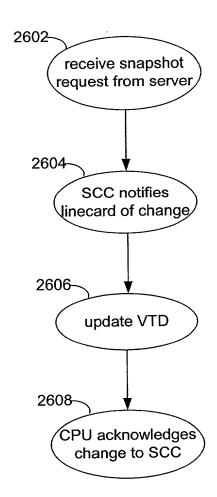
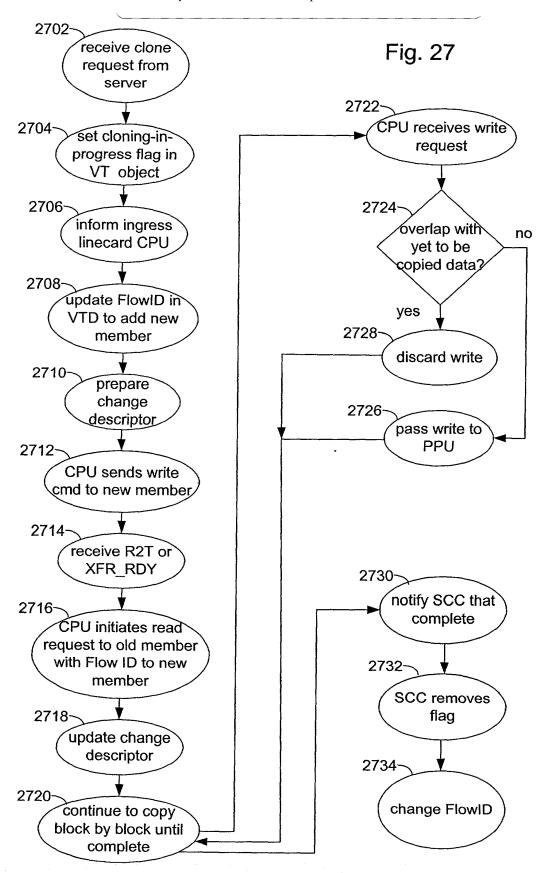


Fig. 26

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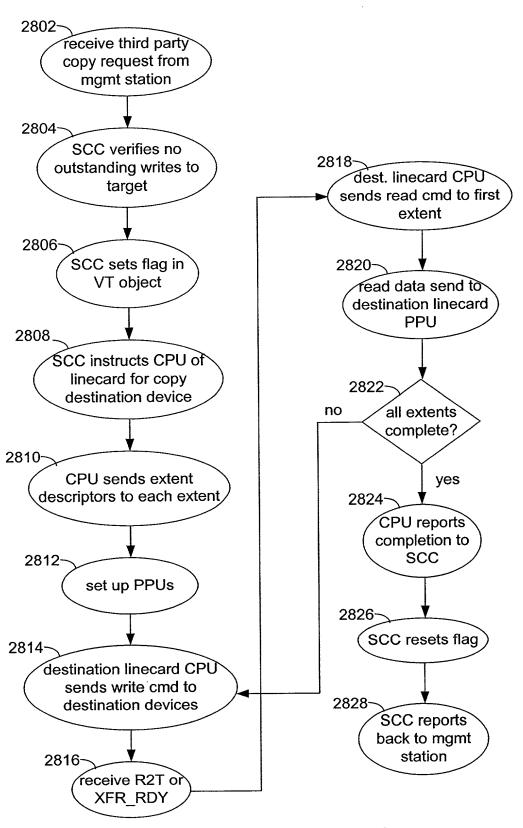


Fig. 28